

SILICONE CONFORMAL COATING

422B-LIQUID

Safety Data Sheet

Section 1: Product and Company Identification

Product Identifier and Other Means of Identification

Product Name: Silicone Conformal Coating**SDS Code:** 422B-Liquid**Related Part #:** 422B-55ML, 422B-1L, 422B-4L, 422BPX-4L, 422B-20L, 422B-P

Recommended Use and Restriction on Use

Use: Conformal coating for printed circuit boards and electronic components**Uses Advised Against:** Not applicable

Details of Manufacturer or Importer

ManufacturerMG Chemicals
1210 Corporate Drive
Burlington, Ontario L7L 5R6
CANADAMG Chemicals (Head Office)
9347-193 Street
Surrey, British Columbia V4N 4E7
CANADA**☎** +1-800-340-0772**☎** +1-905-331-1396**FAX** +1-800-340-0773**FAX** +1-905-331-2682**E-MAIL** support@mgchemicals.com**E-MAIL** info@mgchemicals.com**WEB** www.mgchemicals.com**E-MAIL** (Competent Person): sds@mgchemicals.com

Emergency Phone Number

For hazardous material incidents ONLY—leaks, spills, fires, exposures or accidents
USA or CANADA: Call CHEMTREC ☎: **+1-800-424-9300****For emergencies involving dangerous goods;** Collect 24/7CANADA: Call CANUTEC ☎: **+1-613-996-6666** or ***666** on cellular phones




SILICONE CONFORMAL COATING

422B-LIQUID

Section 2: Hazards Identification

Classification of Hazardous Chemical

GHS Categories

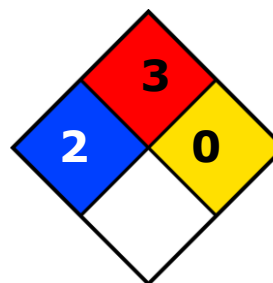
Criteria	Category	Signal Word	Pictograms
Flammable Liquid	2	Danger	
Eye Irritation	2A	Warning	
Skin Irritation	2	Warning	
Specific Target Organ Toxicity Single Exposure	3	Warning	
Aspiration Hazard	1	Danger	
Carcinogenicity	2	Warning	
Environmental Hazard Acute Aqua. Tox.	3	None	No Symbol mandated

Other Classifications

HMIS® RATING

HEALTH:	* 2
FLAMMABILITY:	3
PHYSICAL HAZARD:	0
PERSONAL PROTECTION:	

NFPA® 704 CODES



Approximate HMIS and NFPA Risk Ratings Legend:




0 (Low or none); 1 (Slight); 2 (Moderate); 3 (Serious); 4 (Severe)

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SILICONE CONFORMAL COATING

422B-LIQUID

Label Elements

Signal Word	DANGER
Pictograms	Hazard Statements
	H225: Highly flammable liquid and vapor
	H315: Causes skin irritation H319: Causes serious eye irritation H336: May cause drowsiness and dizziness
	H304: may be fatal if swallowed and enters airways H351: Suspected of causing cancer
No Symbol Mandated	H402: Harmful to aquatic life
Prevention	Precautionary Statements
P102	Keep out of reach of children.
P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233	Keep container tightly closed.
P240	Ground/bond container and receiving equipment.
P241 + P243	Use explosion-proof electrical/ventilating/lighting equipment. Take precautionary measures against static discharge.
P260 + P271	Do not breathe mist/vapors/spray/fumes. Use only outdoors or in well-ventilated area.
P264	Wash hands thoroughly after handling.
P280	Wear protective gloves/eye protection/face protection.
P273	Avoid release to the environment.

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SILICONE CONFORMAL COATING

422B-LIQUID

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Response	Precautionary Statements
P370 + P378	In case of fire: Use dry chemical, carbon dioxide, chemical foam, or water spray to extinguish.
P301 + 310 + P331	IF SWALLOWED: Immediately call a Poison Center/doctor. Do NOT induce vomiting.
P303 + P361 + P364 + P352	IF ON SKIN (or hair): Take off immediately all contaminated clothing and wash it before reuse. Wash with plenty of water.
P332 + P313	If skin irritation occurs: Get medical advice/attention.
P304 + P340 + P312	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTRE/doctor if you feel unwell.
P308 + P313	IF exposed or concerned: Get medical advice/attention.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313	If eye irritation persists: Get medical attention.
Storage	Precautionary Statements
P403 + P235	Store in well ventilated place. Keep cool.
P405	Store locked up.
Disposal	Precautionary Statements
P501	Dispose of contents/container in accordance to local/regional/international regulations.

Other Hazards

EUH066: Repeated exposure may cause skin dryness or cracking.

Section 3: Hazardous Ingredients

CAS #	Chemical Name	Wt%
67-64-1	acetone	40-45%
1330-20-7	xylene (mixed isomers)	19-22%
108-65-6	1-methoxy-2-propanol acetate	4-6%
100-41-4	ethylbenzene	4-5%

SILICONE CONFORMAL COATING**422B-LIQUID****Section 4: First Aid Measures**

<i>Exposure Condition</i>	<i>GHS Code: Precautionary Statement</i>
IF IN EYES	P305 + P351 + P338, P337 + P313
Immediate Symptoms	Immediate: <i>severe irritation, redness, pain, blurred vision</i>
Response	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
IF ON SKIN (or hair)	P303 + P361 + P364, P352, P333 + P313
Immediate Symptoms	Immediate: <i>irritation, dry skin</i>
Response	Take off immediately all contaminated clothing and wash it before reuse. Wash with plenty of water. If skin irritation occurs: Get medical advice/attention.
IF INHALED	P304 + P340, P312, P308 + P313
Immediate Symptoms	Immediate: <i>irritation, headache, drowsiness, dizziness, cough</i>
Response	Remove person to fresh air (out of the contaminated zone) and keep comfortable for breathing. If feeling unwell: Call a doctor. If exposed or concerned: Get medical advice/attention.
IF SWALLOWED	P301 + P310 + P331
Immediate Symptoms	Immediate: <i>Irritation, burning sensation, abdominal pain</i>
Response	Immediately call a Poison Center/doctor Do NOT induce vomiting.

SILICONE CONFORMAL COATING**422B-LIQUID****Section 5: Fire Fighting Measures**

Auto-ignition Temperature ^{b)}	≥315 °C [≥810 °F]	Flash Point ^{a)}	-18 °C [-0.4 °F]	LFL [LEL] ^{c)}	1% (v)
				UFL [UEL]	13% (v)

In case of fire P370

Response P378: Use dry chemical, carbon dioxide, chemical foam, or water spray to extinguish. Use water spray to cool containers.

Combustion Products Produces CO and CO₂.

Fire-Fighter Wear self-contained breathing apparatus for fire fighting

General Information Vapors may accumulate in low-lying areas. They can cause flash fire or ignite explosively.

a) Based on component with lowest auto-ignition value

b) Based on acetone closed cup value

c) LFL = Lower Flammability [or Explosion] Limit (in volume %);

UFL = Upper Flammability [or Explosion] Limit (in volume %)

Section 6: Accidental Release Measures

Personal Protection: See Section 8. Avoid breathing the mist/vapors.

Containment Remove all sources of ignition.

Cleaning Collect liquid in a sealable, solvent-resistant container. Sprinkle inert absorbent compound onto spill, then sweep into the container. Wipe up further residue with paper towel and place dirty towels in container. Wash spill area with soap and water to remove the last traces of residue.

RECOMMENDATION: Use a grounded stainless steel or carbon steel container.

Disposal Dispose of spill waste according to Section 13.

SILICONE CONFORMAL COATING**422B-LIQUID****Section 7: Handling and Storage**

Prevention Keep away from heat/sparks/open flames/hot surfaces. No smoking.

Do not get in eye, on skin, or on clothing.

Avoid breathing fume/vapors. Use only outdoors or in well ventilated area. In cases of inadequate ventilation wear respiratory protection.

Do not eat, drink, or smoke when using this product.

Handling Wear protective gloves/clothing/eye protection.

RECOMMENDATION: Wear neoprene, butyl rubber, nitrile or other impervious gloves with breakthrough time greater than intended use period.

Wash hands thoroughly after handling.

Storage Store locked up.

Keep container tightly closed. Store in a well-ventilated area. Keep cool.

RECOMMENDATION: Keep in a dry and clean area, away from incompatible substances.

SILICONE CONFORMAL COATING

422B-LIQUID

Section 8: Exposure Controls/Personal Protection

Substances with Occupational Exposure Limit Values

Chemical Name	Country	Long Term Exposure Limits (PEL)	Short Term Exposure Limits (STEL)
acetone	ACGIH	750 ppm	1 000 ppm
	U.S.A. OSHA PEL	100 ppm	150 ppm
	Canada AB	500 ppm	750 ppm
	Canada BC	250 ppm	500 ppm
	Canada ON	500 ppm	750 ppm
	Canada QC	750 ppm	1 000 ppm
xylene (mixed isomers)	ACGIH	100 ppm	Not established
	U.S.A. OSHA PEL	100 ppm	150 ppm
	Canada AB	500 ppm	150 ppm
	Canada BC	100 ppm	150 ppm
	Canada ON	100 ppm	150 ppm
	Canada QC	100 ppm	150 ppm
1-methoxy-2-propanol acetate	ACGIH	Not established	Not established
	U.S.A. OSHA PEL	Not established	Not established
	U.S.A. California ^{a)}	100 ppm	150 ppm
	Canada AB	Not established	Not established
	Canada BC	50 ppm	75 ppm
	Canada ON	50 ppm	Not established
Canada QC	Not established	Not established	
ethylbenzene	ACGIH	100 ppm	Not established
	U.S.A. OSHA PEL	100 ppm	125 ppm
	Canada AB	150 ppm	200 ppm
	Canada BC	20 ppm	Not established
	Canada ON	100 ppm	125 ppm
	Canada QC	100 ppm	125 ppm

Note: Ingredients are listed in descending weight contribution order (from greatest to least). The ACGIH², OSHA (Table Z-1), and Canadian provinces exposure limits were consulted. Limits from by RTECS database¹ of the Canadian Centre for Occupational Health and Safety (CCOHS) a data from suppliers' SDS were also consulted. Short term exposure limits (STEL) are for 15 min and long term permissible exposure limits (PEL) for 8 h.

a) California Code of Regulations, Title 8, Section 5155. Airborne Contaminants. Can be absorbed through skin.

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SILICONE CONFORMAL COATING**422B-LIQUID****Engineering Controls**

Ventilation Keep airborne concentrations below exposure limits.

Personal Protective Equipment

Eye protection Wear appropriate protective eyeglasses or chemical safety goggles.

RECOMMENDATION: Use safety glasses with lateral protection (side shields).

Skin Protection Wear appropriate protective clothing to prevent skin contact.

RECOMMENDATION: Use of protective gloves in butyl rubber, latex, neoprene, or other chemically resistant gloves.

Respiratory Protection If exposed to mist, wear respirator such as a half-mask respirator.

RECOMMENDATION: Consult your local safety supply store to ensure your respirator has filter cartridges appropriate for the ingredients listed in section 3 of this SDS, and that the respirator is fitted to the employee by a professional. Ensure vapor cartridges are stored in sealed plastic bags when not being used.

General Hygiene Considerations

Wash hands thoroughly with water and soap after handling.

SILICONE CONFORMAL COATING
422B-LIQUID
Section 9: Physical and Chemical Properties

Physical State	Liquid	Appearance	Clear
Odor	Ethereal	Odor Threshold	Not available
pH	Not available	Specific Gravity	0.85
Solubility in Water	Partially soluble	Melting Point	Not available
Boiling Point ^{a)}	≥56 °C	Evaporation Rate	fast
Flash Point ^{a)}	-18 °C [-0.4 °F]	Vapor Pressure @ 20 °C	~23 kPa [~197 mmHg]
Lower Flammability Limit ^{b)}	1%	Upper Flammability Limit ^{b)}	13%
Auto-ignition Temperature ^{b)}	≥432 °C [810 °F]	Decomposition Temperature	Not available
Viscosity @40 °C	<20.5 mm ² /s	Vapor Density	Not available
Partition Coefficient	Not available		

a) Values for flash point and other threshold based on acetone

b) Calculated using Raoult's Law and Le Chatelier Principle

c) Values for based on the component with the lowest auto-ignition value

Section 10: Stability and Reactivity

Stabilities	Chemically stable at normal temperatures and pressures
Conditions to Avoid	Ignition sources, excessive heat, and incompatible substances. Vapors may form explosive mixture with air.
Incompatibilities	Nitrates, strong oxidizing agents, strong reducing agents, strong acids, strong bases
Polymerization	Will not occur
Decomposition	Will not decompose under normal conditions. For thermal decomposition, see combustion products in Section 5

SILICONE CONFORMAL COATING

422B-LIQUID

Section 11: Toxicological Information

Likely Routes of Exposure

Eyes, ingestion, inhalation, and skin

Symptoms Summary

- Eyes** Causes serious eye irritation if splashed in eye or exposed to vapors.
- Skin** Causes moderate skin irritation.
- Inhalation** May cause nose, throat and lung irritation. Overexposure may lead to visual impairment and central nervous system effects such as dizziness, drowsiness, or weakness
- Ingestion** See inhalation symptoms.
- Chronic** The ethylbenzene component is a possible carcinogen.

Acute Toxicity (Lethal Exposure Concentrations)

Chemical Name	LD50 oral	LD50 dermal	LC50 inhalation	TCLo inhalation
acetone	5 800 mg/kg Rat	>9 400 µL/kg Guinea pig	44 g/m ³ 4 h Rat	10 mg/m ³ 6 h Human
xylene	4 350 mg/kg Rat	>1 700 mg/kg Rabbit	5 000 ppm 4 h Rat	200 ppm Human
1-methoxy-2-propanol acetate	8 532 mg/kg Rat	>5 g/kg Rabbit	Not established	400 ppm Human
ethylbenzene	3 500 mg/kg Rat	>5 000 mg/kg Rabbit	35 500 mg/m ³ 2h Mouse	100 ppm 8h Human

Note: Representative toxicity data from by RTECS database of the Canadian Centre for Occupational Health and Safety (CCOHS)¹ data from supplier (M)SDS were also consulted.

- Skin corrosion/irritation** Causes skin irritation based on Draize tests on animals. Prolonged or repeated skin contact may cause dermatitis
- Serious eye damage/irritation** Causes severe eye irritation based on Draize tests on animals.
- Sensitization** (allergic reactions) No data available

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SILICONE CONFORMAL COATING**422B-LIQUID**

Carcinogenicity (risk of cancer)	Ethylbenzene [100-414-4] IARC Group 2B: Possibly carcinogenic to humans ACGIH A3: Confirmed animal carcinogen with unknown relevance to humans CA Prop 65: Listed as a carcinogen NTP: Not listed
Mutagenicity (risk of heritable genetic effects)	No data available
Reproductive Toxicity (risk to sex functions)	No data available
Teratogenicity (risk of fetus malformation)	No data available
STOT-single exposure	Xylene and acetone can affect the central nervous system by inhalation causing drowsiness or dizziness.
STOT-repeated exposure	No data available
Aspiration hazard	Mixture containing more than 10% Class 1 aspiration toxicant and having a viscosity <20.5 mm ² /s

Section 12: Ecological Information

The IMDG Code criteria and the raw-material (M)SDS along with supporting data for the classification of registered substances from the European Chemical Agency database (<http://echa.europa.eu>) were used.

Acetone and 1-methoxy-2-propanol acetate have low fish ecotoxicity between 100 and 1000 mg/L for fish.

Xylene isomers mixture are expected to be acute category 2 environmental toxicant (with minimal LC50 of 2.5 mg/L for fish)

Ethylbenzene is an acute category 2 environmental toxicant (with minimal LC50 of 4.2 mg/L for *Oncorhynchus mykiss* (rainbow trout); 2.9 mg/L 48 h *Daphnia magna* (water flea)).

Acute Ecotoxicity

Category 3

GHS Code: Hazard Statement

H402: Harmful to aquatic life

P273: Avoid release to the environment

P391: Collect spillage

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SILICONE CONFORMAL COATING

422B-LIQUID

Chronic Ecotoxicity

Not data available

Biodegradability

Not data available

Other Effects

Regulated Volatile Organic Content (VOC) = 32% (289 g/L)

Section 13: Disposal Information

Dispose of contents in accordance with all local, regional, national, and international regulations.

Section 14: Transport Information

Ground

Refer to TDG regulations (Canadian Transportation of Dangerous Goods regulations);
USA DOT 49 CFR (Parts 100 to 185) **Regulations.**

Sizes 5 liter and under

Limited Quantity



Sizes greater than 5 liter

UN number: UN1263

Shipping Name: PAINT

Class: 3

Packing Group: II

Marine Pollutant: No

Flash Point = -18 °C [-0.4 °F]



Air

Refer to ICAO-IATA Dangerous Goods Regulations.

Sizes up to 5 L (Passenger), 60 L (Cargo)

UN number: UN1263

Shipping Name: PAINT

Class: 3

Packing Group: II

Marine Pollutant: No

Flash Point = -18 °C [-0.4 °F]



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SILICONE CONFORMAL COATING**422B-LIQUID****Sea****Refer to IMDG regulations.**

Sizes 5 liter and under

Limited Quantity

Packing Instr. P001

Sizes greater than 5 liter

UN number: UN1263**Shipping Name:** PAINT**Class:** 3**Packing Group:** II**Marine Pollutant:** No

Flash Point = -18 °C [-0.4 °F]



Note: Shipper must be appropriately trained and certified before involvement with the transport of dangerous goods.

Section 15: Regulatory Information**Canada****WHMIS Classification**

B2 – Flammable Liquid;

D2A – Very Toxic Material (Carcinogen IARC: 2B);

D2B – Toxic Material (Eye and Skin Irritation)

Domestic Substance List (DSL) / Non-Domestic Substance Lists (NDSL)

All hazardous ingredients are listed on the DSL/NDSL.

Industry and Science Canada

MG Labels products intended for the workplace to conform to WHMIS labeling regulations. Product identification, net quantity declaration, minimum printing type size heights, and packaging of this product are in compliance.

Health Canada

Products produced by MG Chemicals intended for retail display conform to the Canadian Consumer Labeling Regulations.

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SILICONE CONFORMAL COATING**422B-LIQUID****USA****CAA** (Clean Air Act, USA)

This product does not contain any class 1 ozone depleting substances.

This product does not contain any class 2 ozone depleting substances.

This product contains ethylbenzene and xylene that are listed as hazardous air pollutants.

EPCRA (Emergency Planning and Right to Know Act, USA, 40 CFR 372.45)

This product contains ethylbenzene (CAS # 100-41-4; reportable quantity = 1000 lb) and xylene (CAS# 1330-20-7, reportable quantity = 100 lb), which are subject to the reporting requirements of section 313 Title III of the SARA of 1986 and 40 CFR part 372.

TSCA (Toxic Substances Control Act of 1976, USA)

All substances are TSCA listed.

California Proposition 65 (Chemicals known to cause cancer or reproductive toxicity, USA).

This product contains ethylbenzene (CAS # 100-41-4), which is listed as a carcinogen.

Europe**RoHS**

This product does not contain any lead, cadmium, mercury, hexavalent chromium, PBB's, or PBDE's, and complies with European RoHS regulations.

WEEE

This product is not a piece of electrical or electronics equipment, and is therefore not governed by this regulation.

Section 16: Other Information

SDS Prepared by Michel Hachey

Date of Revision 30 July 2014

Supersedes 02 August 2013

Reason for Changes: Corrected shipping name in Section 14 and formatting changes.

Continued on the next page

SILICONE CONFORMAL COATING**422B-LIQUID****Reference**

- 1) All toxicological data were checked against the RTECS (Registry of Toxic Effects of Chemical Substances®)
- 2) ACGIH 2011 TLVs and BEIs: Based on the documentation of the threshold limit values for chemical substances and physical agents & biological exposure indices, American Conference of Governmental of Industrial Hygienist Cincinnati, OH (2011).

Abbreviations

ACGIH American Conference of Governmental Industrial Hygienists
GHS: Globally Harmonized System of Classification of Labeling of Chemicals
LC50 Lethal Concentration 50%
LCLo Lowest published lethal concentration
LD50 Lethal Dose 50%
N/A Not Applicable
N/E Not Estimated
PEL Permissible Exposure Limit
STEL Short-Term Exposure Limit
TCLo Lowest published toxic concentration
TWA Time Weighted Average
VOC Volatile Organic Content

Technical Queries Contact us regarding any questions, improvement suggestions, or problems with this product. Application notes, instructions, and FAQs are located at www.mgchemicals.com.

Email: support@mgchemicals.com

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